

ICEBREAKER

TASMANIA'S ANTARCTIC BUSINESS MAGAZINE

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An artist's voyage

Wile World of Waste

Veolia's role

Antarctic Education

Andy Baird's view

Cool Action

A Host of Antarctic activities



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Editorial

Even with the Midwinter Festival and COMNAP activities over for the year, I have had little time for a break in Antarctic activities, with new orders for Igloo Satellite Cabins for the Falklands and India, follow-ups to more potential customers from overseas and organising articles for forthcoming editions.

Contacts made during the winter events have provided me with new topics, including Coral Tulloch's observations about Antarctica and Andy Baird's call for better Antarctic education in feeder schools for students involved in Antarctic Studies and the new International Antarctic Institute at the University of Tasmania.

While efforts have been made to establish these studies at tertiary level, I agree with Andy that it is vital to prepare primary and secondary students for this further study. Perhaps next year's International Polar Year could be the motivation for those interested in this project to not just talk about it (again) but to consolidate their ideas and develop a plan of action.

Anthea Wallhead

Cover Picture: Northern extreme sculpture - reviewing an Alaskan iceberg [Photo: Kenji Ogawa]

Back Page: Stamp Covers from Klaus Arne Pedersen

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ICE BREAKER Exclusive!

An Ice Viewpoint: Coral Tulloch's Antarctic voyage

15

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ICE BREAKER
TASMANIA'S ANTARCTIC BUSINESS MAGAZINE



First stop...Antarctica!

Tasmania is on the brink of achieving history with the completion of an ice runway for large aircraft at the Wilkins Aerodrome, near Casey Station, just around the corner.

Once the runway works have been completed, the concept of regular flights from Hobart to the Antarctica will become a reality.

The Antarctic Airlink is a fantastic initiative and will massively open up scientific and economic opportunities for Tasmania.

Antarctic and Southern Ocean experts, from around the globe, will make Hobart their number one destination as they make their way to the world's seventh continent. This will mean many spin-offs for local businesses and research authorities.

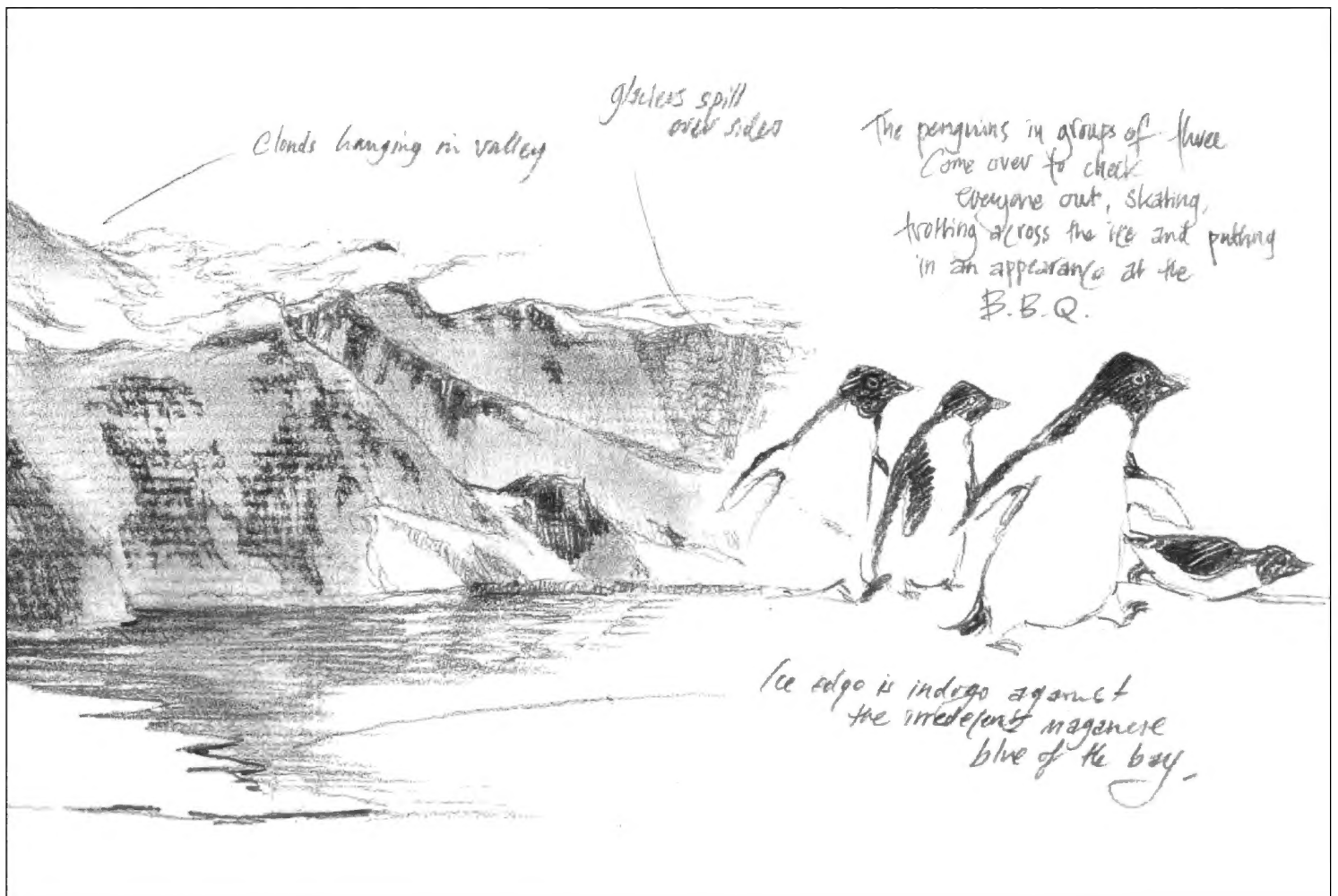
Many people have worked many years on making this project a reality with the Tasmanian Polar Network being one of the major advocates for the runway's construction.

The Australian Government also has to be thanked for its major investment in the Antarctic airlink totalling some \$46.3 million. The Federal Minister for the Environment and Heritage, Senator Ian Campbell, has led the way in gaining these funds and ensuring that they were applied to the initiative as soon as possible.

It will be a great sight seeing the first Antarctic Airlink flight take-off from the Hobart International Airport and head south to what is a truly marvellous and unique place, Antarctica.

Will Hodgman, MHA

Leader of the Tasmanian Liberals



Drawing By Coral Tulloch

PEG PUTT'S MESSAGE



It may come as a surprise to many, but despite its isolation (1,500 km south-east of mainland Tasmania) Macquarie Island is currently playing host to a booming population of European visitors - feral rabbits. It's an occurrence that ecologists say could cause irreversible damage to plant and animal communities on the island. Until recently, feral cats have kept the feral rabbit population in check. But with the success of the cat eradication program, and a longer breeding season due to global warming, the rabbits have been breeding like...well, rabbits.

Endangered bird species like grey petrels, which experienced a short-lived comeback after feral cat numbers declined, are immediately under threat as their nesting burrows are eroded by rabbits devouring the delicate tussocks that once held the soil in place.

This remarkable story of plant, animal and environment interaction is worth understanding as it serves as a reminder to us what is meant when people use words like "delicate" or "fragile" to describe the ecological communities of the Sub-Antarctic islands and Antarctica itself. It also reminds us of our own responsibilities as stewards of these great places we have chosen to visit, explore and, in many cases, work.

The Tasmanian and Australian governments, through the Tasmanian Parks and Wildlife Service and the Australian Antarctic Division (AAD), should swiftly cooperate to nip this problem in the bud. The state government is not proactive in dealing with the threat that feral species pose to Tasmania's ecosystems and economy (both on mainland Tasmania and its outlying islands). In our 2006-07 Alternative State Budget the Greens demonstrated how the state government could establish and fund a Feral Species Unit within the Department of Primary Industries and Water (which also deals with environment). The current situation on Macquarie Island—the world's sixth largest designated protected terrestrial area—is just one more example of why it is urgently needed.

It was also interesting to note the part that global warming is playing in the story of the rabbits on Macquarie Island. While global warming appears to be a rather steady increase in average global temperatures (put into play by our increased burning of fossil fuels), the many effects of global warming are proving to be, at best, unpredictable. Antarctica and the sub-Antarctic islands are a hotbed of scientific inquiry into some of these unpredictable effects; from local ecological effects like the prolonged rabbit breeding season on Macquarie Island, to regional climatic effects like changing rainfall patterns.

So it is certainly pleasing to see that one of the great outposts of Antarctic science is pushing to make its own operations a bit more green. A recent news report highlighted efforts by the AAD to use hydrogen power at Mawson Station in Antarctica. The report said that using hydrogen generated by wind turbines already operating would reduce costs associated with oil and gas delivery to the station and reduce greenhouse gas emissions. Sounds like a win-win situation, and the type of innovation we need more of as we all struggle to come to grips with global warming.

Peg Putt MHA
Tasmanian Greens Opposition Leader

COMNAP BRIEFS

Topics publicised during the Councils of Managers of National Antarctic Programs (COMNAP) meetings, which over 800 delegates attended, included:

- Arctic and Antarctic areas have an estimated 2-year's worth of oil available. If the price per barrel reaches \$150-\$200, drilling through Antarctic ice would become more viable and could lead to a review on the ban on oil exploration.
- If CO₂ levels were to double by 2100, Antarctica could return to how it looked 20 million year's ago, with trees and grass. Due to the effects of global warming, invasive plant species are evident on the Antarctic Peninsula; winds and circumpolar current have increased in strength and the sea level is rising 3mm every 10 years as the water expands because of warmth.

TPN CHAIRMAN'S MESSAGE



I think it's fair to say that the last 3 months have seen the most activity in the sector ever with the Midwinter Festival, SCAR/COMNAP in Hobart and the inaugural Sub-Antarctic Forum immediately beforehand. All of this is now behind us and it is sensible to reflect on what happened and what might now be possible.

The Midwinter Festival again drew increased levels of participation from Hobartians and is becoming more cemented in the annual calendar of events for Hobart and Tasmania. It is appropriate that the Tasmanian Polar Network reflect on the fact that the Festival was the brainchild of the TPN and the reasons for it. At the outset, we recognised the need to engage 'Joe and Jo Citizen' more fully with the proximity and relevance of the globe south of Hobart from both opportunity and heritage points of view. Whilst this is being achieved more and more each year, I personally wonder if we now need to extend the coverage more widely to the whole populace rather than focus primarily on the fairly close knit Antarctic and Southern Ocean community? I think the growing popularity of the 'Huskies Picnic' shows there is a wider appetite which we need to meet more fully in future Festivals. I hope to encourage wider debate on this point.

The success of the SCAR/COMNAP is well known. It was a tremendous opportunity for Tasmania and I think we took good advantage of it. The TPN and Antarctic Tasmania Booth at the Hotel Grand Chancellor was a terrific effort and made strong impact. Well done to all concerned in its design and construction. It was gratifying to see the coordinated efforts of TPN Members with those of AT and AAD et al to woo more activity and business to Tassie. Well done again to all concerned – I am aware of some real opportunities for us in Tasmania which were identified by this combined effort.

The inaugural Forum on the Sub-Antarctic was also a resounding success with very strong outcomes in both attendance and participation terms. I hope that the hard working organising committee is gratified by the outcomes and note particularly the vision and endeavour of our Antarctic Ambassador, Sir Guy Green, who was clearly the driving force behind the success of the forum both in planning and execution.

Finally, amongst the frenzy of recent activity in the last 3 months, the establishment of the International Antarctic Institute during July was a milestone in implementing the ideas and plans for engagement of UTas into the sector. These ideas were the direct outcome of the Governor's Forums hosted by Sir Guy Green during his time in this office. It is always pleasing to see ideas come to fruition and this is no exception as the possibilities for the future are now many.

All that said about the recent past, when we turn our minds to the coming summer season we await with enthusiasm the first direct, return jet flight from Hobart to Antarctica. This will truly be a momentous occasion and one for which we eagerly anticipate the announcement of detail plans very soon.

Bill Lawson.

TPN Chairman.





It is fair to say that June and July were extremely hectic months in the Antarctic Tasmania office with the Antarctic Midwinter Festival, Sub-Antarctic Forum, SCAR/COMNAP Meetings and Antarctic Treaty Meetings (ATCM) being held in Edinburgh – just to name a few of the activities which were held during this period! Ben Galbraith is now taking a well-earned break and has left me (Heather Glidden) to hold the fort for a few weeks.

I'll start from the top with the first of our long procession of activities – the Antarctic Midwinter Festival. The 2006 Festival was successfully staged during 16 – 25 June and highlights included:

- Attendance exceeded 44,000 and this included record attendances at the Longest Night Film Festival, Tasmanian Museum and Art Gallery exhibitions and the Huskies Picnic.
- New events this year included *Ice Cold Words* writer's festival and the *One Planet Extreme Environment Photographic Competition*.
- Antarctic Tasmania published a compilation of the first four lectures from the Phillip Law series entitled: *The Phillip Law Lectures Vol 1: 2002 to 2005*. Copies of the lectures are available from Antarctic Tasmania office at no charge.
- Also during the Festival period Sir Guy Green presented three university students with scholarships which occur via a sponsorship agreement between Antarctic Tasmania and IASOS. Congratulations to Mel Weber, Kate Stark and Rachael Parkinson for their awards.

Continuing on the scholarship topic, the inaugural Tasmanian Marine Science Fellowship was also awarded on 5 July at the International Forum on the Sub-Antarctic. Scholarships went to three students – Ben Galton, Matthew Brown and Dr Philippe Ziegler. This prestigious scholarship gives these students the opportunity to travel to France to undertake study with institutions such as the Institut Polaire Francais Paul Emile Victor (IPEV) for up to three months.

One of the most significant activities undertaken by Antarctic Tasmania this year was the International Forum on the Sub-Antarctic. This Forum was convened by Antarctic Tasmania and held at the CCAMLR Headquarters from 5 – 7 July. Ninety-six delegates attended the forum with approximately half of these delegates being from interstate and overseas. The Forum was highly successful with over 25 speakers presenting on all aspects of the Sub-Antarctic. Outcomes of the Forum include in principle agreement to publish the proceedings of the Forum and the establishment of a Sub-Antarctic Forum website. It is hoped that this Forum will become a regular event for Tasmania, giving the State the opportunity to take the lead in the advancement of Sub-Antarctic issues globally.

The SCAR/COMNAP conference and its associated meetings brought over 900 delegates to Hobart during early July to discuss and collaborate on a wide range of Antarctic scientific and operational issues. With many international delegates in attendance, this was by far the largest conference on Antarctic science ever held in the Southern Hemisphere. An important part of SCAR/COMNAP was the 2nd SCAR Open Science Conference. This meeting reported on the latest advances in Antarctic science and, in particular, the role of Antarctica in the total Earth System. All of these meetings also provided the best opportunity to date for the Tasmanian Antarctic Sector to showcase its unique capabilities. Accordingly, Antarctic Tasmania both organised and participated in many activities during this period including a number of targeted functions and the SCALOP Trades Exhibition.

One major outcome of the meetings for Tasmania was the formal commencement of the International Antarctic Institute. Ben Galbraith attended this meeting on 8 July which formally brought into being the International Antarctic Institute and saw approximately 8 – 10 members sign a memorandum of understanding in support of the institute.

With all the mid-year excitement now over Antarctic Tasmania looks forward to another exciting year of projects, including a focus on Antarctic Tourism with the IAATO meetings in June 2007 and the emerging Antarctic airlink opportunities. Finally, but most importantly, Cordula Ruckstuhl – our long servicing administration manager has decided to ease herself into a more relaxing lifestyle by commencing part time employment (Mon – Wed) – however, we have a fresh new face in Caroline Grubb (Thurs – Fri) who will be with us for the time being until a more permanent position is established – so please make her welcome if dealing with our office!

Antarctic Tasmania must thank all the organisations and individuals that supported the activities of the past few months, in particular, those who participated and contributed to the Antarctic Midwinter Festival and SCAR/COMNAP trades exhibition. I would also like to make special mention of the efforts of the Tasmanian Polar Network members who participated in the SCAR/COMNAP working group, as these individuals gave up many hours of their time over the past 12 months to help promote the Tasmanian Antarctic Sector to our global audience during July.

MESSAGE FROM HOBART'S LORD MAYOR

Not surprisingly I wish to comment on the July SCAR/COMNAP conference. What a fantastic event for Hobart and the State! The organising committee is to be highly commended for the manner in which the Conference was executed and the kudos it has brought our City. What a wonderful sight to drive up Davey Street past the display of Antarctic equipment at the Hotel Grand Chancellor (see photo below) and then to see the Antarctic banners across the City. I believe it provided a great welcome to the 900 plus delegates that attended the conference and associated events.

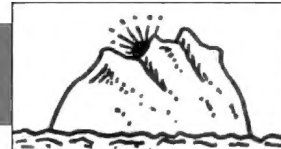
Having the conference in Hobart reminded me of the importance of organisations such as CCAMLR, AAD and IASOS and the role they have played in ensuring Hobart and Tasmania are on the Antarctic industry map. It is vital that as a state we continue to promote our connections with the Antarctic and sub-Antarctic and seek new opportunities to host both private and public organisations with an interest in this area.

The conference presented this State in the very best light – from the trade display at the Hotel Grand Chancellor to the numerous social functions that occurred. At the official Icebreaker function I was very proud to be able to welcome delegates to our beautiful City, many of whom had travelled a long way to attend. It may surprise many readers that the conference was the largest Antarctic Science conference ever held in the Southern Hemisphere. I believe this is proof of just how important the work of the Tasmanian Antarctic community has been, and will continue to be, into the future. It also proves how highly regarded we are in the international community.

Again, my heartiest congratulations to all those involved - it was an event I know that the Council was proud to be associated with.

Alderman Rob Valentine





MEDAL WINNER

On Midwinter's Day this year, the bosun of *Aurora Australis* became the first seaman to be awarded an Australian Antarctic medal. Per Larsen has been responsible for co-ordinating the deployment and retrieval of specialized equipment during the ship's marine research voyages for the past decade.

SOUTHERN RIVER ORIGINS

A new Antarctic base will be established by India to research the pre-historic origins of the Godavari River, a Hindu holy river believed to have flowed through the Larsemann Hills area then India was part of the ancient supercontinent of Gondwana.

WHALE NEWS

- The Australian Antarctic Division will be the base for the new Australian Centre for Applied Marine Mammal Science, which will focus on protecting and conserving 40 species of whales and dolphins as well as 10 species of seals and dugongs. Priorities will include non-lethal studies techniques, effects of noise on whales, and other human impacts.
- Japan is still trying to gain sufficient support for a resumption of commercial whaling, despite slaughtering pregnant minke whales and planning to kill 50 humpback whales next year
- Alaska has designated thousands of square kilometres offshore for the protection of North Pacific right whales.

ANTARCTIC RESEARCH WINNERS

- TAS. MARINE SCIENCE FELLOWSHIP:
Ben Galton, Mathew Brown, Dr. Phillipe Ziegler. (UTas)
- VEOLIA SUSTAINABILITY AWARD:
Jennifer Parnell. (UTas)
- ANTARCTIC TASMANIA SCHOLARSHIP:
Mel Weber, Kate Stark, Rachael Parkinson. (UTas)
- EMU – AUSTRAL ORNITHOLOGY 2005 BEST STUDENT PAPER AWARD:
Rachael Alderman (DPIW)

ICE BEARS' NEW ADVENTURES

Berkley and Ozgold, the intrepid toy bears, will be travelling south this year with American school teacher Betty Trummel from the Husmann Elementary School, Crystal Lake, Illinois. This coming Austral summer Betty is joining the ANDRILL project and will be spending a couple of months (from mid-late October to around third week in December) with them "on the

ice". The ANDRILL project is an international one (USA, Germany, Italy and New Zealand) loosely headquartered at the University of Nebraska. Betty will be one of four educators on the team in a sub-program known as ARISE.

According to Betty's latest email:
'We will have daily journals in the form of a book like the "Bears on Ice" most recent journals. Each day organized into a "chapter" of the book. Also, ANDRILL has a blog that students/teachers/friends can use, and I will also send out group emails to people on my "mailing" list. I will try to do a weekly Powerpoint slide show (not too many slides so that this can be sent easily via internet connections) and also some video clips... I want as many people from your area to be on the network I establish, so please send me email contact and other land-based contact info for interested teachers and others.'

For information about ANDRILL and ARISE check out - <http://www.andrill.org/>
[Thanks to Gordon Bain for this information.]

MARITIME HEAD

The new principal for the Australian Maritime College based in Tasmania is maritime scholar Professor Malek Pourzanjani, formerly based at the World Maritime University in Sweden.

COOL STAMPS

Australia Post recently released stamps illustrating fish of the Australian Antarctic Territory, including the Mackerel Ice Fish, Lanternfish, Eaton's Skate and the Patagonian Toothfish.

ACRONYMS

ANDRILL – Antarctic Geological Drilling
ARISE – ANDRILL Research Immersion for Science Educators
BOM – Bureau of Meteorology
CCAMLR – Convention for the Conservation of Antarctic Marine Living Resources
COMNAP – Council of Managers of National Antarctic Programs
DPIW – Dept. of Primary Industries and Water
SCAR – Scientific Committee on Antarctic Research
SCALOP – Standing Committee on Antarctic Logistics and Operations
UTas – University of Tasmania
IASOS – Institute of Antarctic and Southern Ocean Studies

THE HISTORY OF VEOLIA (FORMERLY COLLEX)

Extracts from a speech given by Ron Ward, Group General Manager, at this year's Midwinter Dinner.

Collex is undergoing national rebranding and we are in the process of spreading the word that we are now known as Veolia Environmental Services. The rebranding is an initiative of our global corporate, Veolia Environnement to streamline our image and align services into simple streams namely: waste, water, energy and transport.

With its birth in France as Compagnie Générale des Eaux (CGE) on December 14, 1853 the founders had two goals in mind: to irrigate the countryside and to supply water to towns and cities. After seven years the company signed a 50-year water distribution contract for the Paris municipality and from there on the company built on its expertise for water, waste, transport and energy services. One hundred and fifty years later, its commitment can be summed up in the words of its Chairman and CEO, Henri Proglio "As a French company operating on every continent, we have a duty to translate our values of serving, developing, innovating, sharing and protecting into reality everywhere our employees work. Today, 150 years after our foundation, we are pledged to progress that which preserves life, with just as much enthusiasm as in our early days."

In Tasmania we have been operating in the waste/resource recovery sector for in excess of 25 years, we employ 250 people statewide and we are committed to be around for a while. Now I'm not sure if my 6 years in Tasmania qualifies me as a Taswegian but in my previous life, in Sydney, if it had ever been predicted that I would be addressing such a distinguished group of people this evening with the subject of Antarctica in mind, I would have ruled it out!

On the surface, waste and resource recovery may seem uninteresting but I can assure you as a business it is extremely dynamic and has led our company to be affiliated through commercial and global philanthropic efforts to support the preservation of Antarctica for future generations. Veolia is one of few global corporates which has recognised and backed up its commitment to support the fragile Antarctic environment.

John Brennan of Veolia with the first bins in Antarctica [Photo courtesy Veolia]



THE HISTORY OF VEOLIA (FORMERLY COLLEX)

It is important to reflect upon some pretty sobering predictions for the future of polar regions and our planet:

- Since the start of the industrial revolution atmospheric CO₂ has increased by 35% and the global average temperature has risen by about 0.6 degrees Celsius.
- Continued addition of CO₂ from fossil fuel burning will lead to significant and persistent climate change. For example a 1.4 to 5.8 degrees Celsius average increase over this century.
- Impacts on coastal communities, animals, plants, water resources human health and wellbeing will occur.
- Arctic average temperature has risen at almost twice the rate as the rest of the world in the past few decades.
- The melting of Arctic glaciers threatens global communities, while melting of sea ice opens up opportunities for shipping and mineral, gas and oil exploration.
- Animal and plant diversity and ranges will change.
- Increased UV radiation will affect people, plants and animals.
- In the Northern Hemisphere, thawing permafrost will disrupt infrastructure, transport, and airports etc.

These predictions are spine chilling (excuse the pun) and certainly thought provoking. The message is clear. Local and global action is required to reduce and mitigate human impacts upon the ecosystem. Closer to home, it's no secret that the Southern Ocean and Antarctica are a valuable repository of unique biodiversity and physical features. So in brief, what is Veolia Environment doing to assist efforts in the sub-Antarctic and Antarctic region? Apart from commercially managing seasonal waste returned by foreign and Australian Antarctic bases we have:

- Agreements to philanthropically assist Australian, French and Chilean scientific research, development and logistics.
- Provision of logistic hardware (e.g. specialised bins for the removal of old waste from contaminated sites).
- Support to ARC linkage grants for research and development for remediation technologies for cold climates.
- Sponsorship of students and related topics - this year's Veolia Sustainability Award recipient at the University of Tasmania is Jennifer Parnell who will investigate the effects of eco-tourism on Macquarie Island.
- Donation of expertise and resources to assist with clean up operations.
- Education of school children through web site resources.
- Support of SCAR/COMNAP conference.
- Support/attendance to international contaminants in freezing ground conferences.

It is fitting that tonight we reflect upon the future of our planet, particularly Antarctica, and how we may manage our environmental footprint. Celebrations such as the Midwinter Festival can be used as a tool to get this message across to the general public. I look forward to participating in the festival and beyond and I want to recognise the organisers and of course you all for your efforts in supporting the Antarctic sector be it logistically, politically or scientifically. We all have a role to play.

I just wonder if the Frenchman who founded our company ever thought that their irrigation dreams would stretch to the far polar regions?



Hobart Port with Aurora Australis [Photo: Sue Halliwell]

ANTARCTIC EDUCATION

Andy Baird, Education Officer – Antarctic and Community Programs at the Tasmanian Museum and Art Gallery, outlines his views on fostering the next generation Antarctic community.

No, this is not an article about sovereignty claims via populating the ice continent with babies, but about the role of Antarctic education for school children. Does it matter if children believe there are polar bears in Antarctica? Does it matter if they don't understand anything about Antarctica and the Southern Ocean except what they haphazardly pick up off the popular media? Is there a role in the crowded curricula for studies about Antarctica? Yes, yes and yes!

But too often education is seen as a low priority in the ever-shrinking budgets of research organisations and governments. Especially school-based education. Too often there is a thinking that whilst we should create University degrees and courses for Antarctic studies, the resources needed to ensure a 'feeder stock' into these courses is someone else's responsibility. And even within State Education Departments, too often subjects as contemporary as Antarctic studies, are crowded out by the formal lessons on literacy and numeracy.

Yet there can be few places on earth that have as inherent a fascination for children as the icy continent. Few places where subjects as diverse as science, literacy, mathematics, art, ethics, democracy, history, you name it, can be brought alive with such awe and wonder as to keep students engaged for weeks of study.

Antarctic education speaks to Captain Cook's challenge when he wrote upon completing the first circumnavigation of the polar region in 1772-5:

".... The risk one runs in exploring a coast in these unknown and Icy seas, is so very great, that I can be bold to say, that no man will ever venture farther than I have done and that the lands which may lie to the South will never be explored [should anyone have] the resolution and perseverance to find.... Beyond where I have been I shall not envy him the honour of discovery, but I will be bold to say, that the world will not be benefited by it."



The world has benefited and students of all ages both want to, and need to learn about these benefits. There is a very serious and specific side to the development of an Antarctic literate general community. The region is going to come under increasing pressure over the next fifty years on a number of fronts such as natural resource extraction, tourism and global climate change. Decisions on these issues will fall to the children of today in their adult lives, and whatever we can do to prepare them in making these decisions is time well spent.

So where is Tasmania going with Antarctic Education? I'd suggest a long way, but the momentum currently being felt needs to be kept alive. It is there on the international level, but policy often lacks support at the on-ground level. At the Antarctic Treaty Consultative meeting 20 resolution 11 (1996) the representatives recommended *"Promotion of understanding and appreciation of the values of Antarctica, in particular its scientific, aesthetic and wilderness values, including through a) Educational opportunities, in particular for young persons,"*

At a forum convened by the then Governor Sir Guy Green in August 2003 on "Tasmania, The Antarctic and the Sub-Antarctic" there was discussion about the role of pre-tertiary Antarctic education, and recognition of its importance. Subsequently this has also been expressed in the Tasmanian State Government's policy statement "Tasmania's Antarctic, Sub-Antarctic and Southern Ocean Policy July 2004."

- Action 27: Provide professional learning opportunities for teachers to increase their knowledge about Antarctic, sub-Antarctic and Southern Ocean issues.
- Action 28: Encourage the development of a pre-tertiary education outreach program to provide educational material about Antarctica, the sub-Antarctic and the Southern Ocean to primary and secondary schools within Tasmania, Australia and internationally.
- Action 38: Provide recurrent funding of \$150,000 per annum to create three positions to support the Antarctic, sub-Antarctic and Southern Ocean exhibition at MAG that includes an education Coordinator and



Continued>

ANTARCTIC EDUCATION

Interpretation Officer to ensure that maximum value is delivered from the exhibition to both school and museum visitors; and a curator specialising in Antarctic and Southern Ocean matters.

Current Programs

As I am sure readers are aware, partly in response to these policy directions, the new gallery in the Tasmanian Museum and Art Gallery (TMAG) has opened. *Islands to Ice: The Great Southern Ocean and Antarctica* is probably the most significant resource now available to teachers in Tasmania in communicating issues to do with the region. The benefits of students seeing actual objects and specimens, accessing contemporary and historical research can never be underestimated. But a gallery, and a topic, needs both educational programs and educational resources to make it 'work' as an educational experience. It needs teachers who understand the content and can assist students get close to some unusual concepts. It needs professional development opportunities for teachers to want to explore the themes and feel confident to do so.

To date, (end July 2006), four months into the *Islands to Ice* exhibition, there have been over 4500 students participating in guided programs on Antarctica. Programs as diverse as looking at animal adaptation, human habitation and exploration in the region, underwater life, and the art and literature inspired by the region have been provided. The Midwinter festival of 2006 saw a mini-festival of '*Ice Cold Words: Children's Antarctic Literature and Art Workshops*' held at TMAG with visiting authors from New Zealand, Western Australia and Tasmania. The TMAG twilight teachers' seminar series recently featured a '*Science under the Southern Lights*' session with guest presenters from the Australian Antarctic Division (AAD), Bureau of Meteorology (BOM) and Antarctic Climate & Ecosystems CRC (ACECRC). Partnerships with such organisations are essential, since the developments in science are occurring at a rapid rate and teachers need to remain current in their understandings.



And of course the museum continues to play a role in the non-formal education sector with visits by young people during the weekends, school holidays and after school. Over 150 000 people have now visited the *Islands to Ice* Gallery, giving the icy region a audience reach scientific journals could only dream of! The museum is not alone in promoting and resourcing school level Antarctic Education. We have been fortunate in developing partnerships with the AAD, CSIRO and ACE CRC in particular. Gordon Bain's Ice Box is having unprecedented usage, and related programs are being run out of the Woodbridge Marine Discovery Centre. However much of this activity is being run on a shoestring and succeeding only through the passion and dedication of a few individuals.

The Future

Where does the future lie in Antarctic education? Obviously the TMAG will continue its programs, expanding if resources are found and producing materials where appropriate. There is however a great need for ongoing support and materials from institutions such as the AAD, CSIRO, ACE CRC, BOM... and on goes the list of institutional acronym.

In this context it is timely to look at what is happening outside Australia. The recent presentation in the SCAR/COMNAP conference of the ARISE (ANDRILL Research Immersion for Science Educators) program and its associated educational outreach revealed 10% of the ANDRILL multinational expeditioner staffing for the coming seasons is comprised of professional educators, 6 out of 55 expeditioners.

As the program guidelines specify the programs will allow "*science educators to facilitate development of mechanisms and materials to effectively connect the ANDRILL Program with the public. The ARISE Program provides science educators with an inside view of ANDRILL, will engage participants in authentic Antarctic geoscience, and will utilize their expertise as educators to develop and implement innovative approaches to geoscience education and public outreach. Elements of the program include: full integration into the MIS Science Team with on-ice and off-ice research experience, participation in an Antarctic geoscience course and in an educational working group.*"

The interesting aspect to this is the recognition of the need to establish a collegiate atmosphere for educators visiting Antarctica, the need to involve their immersion in research experiences and the importance for scientific researchers in conveying the outcomes and experiences of their research to the wider public.

Whether Australian researchers and educators can match such ambitious programs as ARISE remains to be seen.

THURSDAY, JUNE 15: My involvement in Antarctic-related winter activities started with the arrival at the Tasmanian Museum and Art Gallery (TMAG) of an Igloo Satellite Cabin on the back of Penguin Composites' small truck. With wall panels already bolted together in pairs and secured to the back of the truck, it did not take long for the panels to be lifted into place on the floor panels set in the corner of the courtyard. Even before it was fully assembled, children wanted to get inside the Igloo, and it became the initial focal point for school groups visiting the 'Islands to Ice' exhibition as well as participating in Antarctic Literature and Arts programs during the Midwinter Festival, which started next day. According to Andy Baird, TMAG's Education Officer, 1000 students visited between 19th and 23rd June.



Penguin Composites manufactured a new Igloo for the Festival and TMAG allowed it to be on display for over a month, so that delegates to the international COMNAP meetings in July were able to see it as well. As a volunteer at TMAG during the following week, I was able to introduce the Igloo to a large number of children, and adults, who enjoyed crowding inside for school group photos and dressing up in Antarctic gear. When over 500 COMNAP delegates visited for the Ice Breaker Reception held by TPN members on July 9, the Igloo once again attracted attention, and it was very interesting meeting people I had only emailed previously, and to talk to delegates from Germany, China and South Africa about its uses in Antarctica.

FRIDAY, JUNE 16: I attended the opening night of the Longest Night Film Festival at the State Theatre and saw two wonderful films: Matt Tucker's 'Snow Petrel Down Under', about Matt, his brother and father's voyage from Kettering, Tasmania to Antarctica aboard 'Snow Petrel' and 'Walking The Line At 4000' directed by Gilles Chappaz, about 2 climbers attempting to climb all 82 summits above 4000 metres in the Alps. Both films had some very memorable and spectacular imagery, and Matt and his family were present for the screening too.

SATURDAY, JUNE 17: Events included the announcement of the winners of the One Planet Extreme Environment Photographic Competition held in the Bond Store. Although the required photo size rather reduced the impact of the photos, those chosen for display contained an impressive range of images. The winner of the One Planet Environment Photograph of the Year was Stuart Gibson, with 'Dustin Hollick, Shipstern Bluff', and the winner of the Wayne Papps Memorial Prize – Best Antarctic Image, was Leigh McLagan with 'Cloud Formations'. Both photos can be seen on the Midwinter Festival website: www.antarctic-tasmania.info. The winner of the People's Choice was Aleks Teraud. That night, I attended the Phillip Law Lecture given by Dr Patricia Selkirk about 'Macquarie Island: Jewel in the Southern Ocean' and the Midwinter Dinner held at CCAMLR headquarters. Guest speaker was Ron Ward, Group General Manager of Veolia Environment. [Extracts from his speech are on Page 10]



SATURDAY JUNE 24: I spent the day with other volunteers helping Kenji, the Ice Sculptor, arranging blocks of ice for his sculptures at Salamanca Market. The Lord Mayor, Rob Valentine also made a carving of Hobart's Post Office Tower, to acknowledge its 100th anniversary, and Kenji's penguins attracted a large crowd. On Sunday, the last day of the Festival, I visited the Royal Tasmanian Botanical Gardens for the Huskies Picnic, more ice sculptures and other Antarctic displays.

Within 3 weeks of all this activity, it was time for the COMNAP series of meetings, trade show and social events. I spent three evenings at social events meeting delegates and discussing polar matters with other members of the Antarctic community, then spent 5 days volunteering at the TPN Trade Show in the Hotel Grand Chancellor, where delegates met for morning tea as well visiting throughout the day. The set design for the TPN display was excellent and provided a strong focal point for members' goods and services. Antarctic Tasmania staff and members who volunteered their time at the TPN display or at their own booths attracted many delegates interested to know more details, and Oscar and Scamp, the Australian Quarantine and Inspection Service (AQIS) dogs, were an added bonus. [However, the diversity of TPN products was not as obvious or extensive as expected, partly because of some members' reluctance or inability to provide photographs or flyers of their specialised goods. Anyone not taking advantage of the opportunities available for interaction with Antarctic representatives from all over the world, in Hobart, during the COMNAP events, needs to reconsider their activity level as a member of the TPN!]

AW



AN ICE VIEWPOINT

Earlier this year a storm raged from 40° to beyond 60° south, spreading itself between Tasmania and New Zealand. Swirling in a continuous spiral, and ending in a tear of dark lines on the satellite map, it lay directly in our path.

This was a voyage, through the Southern Ocean and into the Ross Sea, one of the many tourist trips that now visit the continent of Antarctica. By this stage, most of the passengers had experienced the first landfall at Macquarie Island and attended numerous lectures and briefings. On approach to the continent, our sea legs had been firmly tested as we paid homage to King Neptune, and bought in the New Year whilst the ship lunged in the swirling seas. We were all waiting for the first sea ice, for the ocean to be subdued under its weight.

The sea ice rolls out from the Ross Sea on seemingly great tides and it wasn't long before we felt its calming presence. But one morning we were woken again by relentless rolling and lurching of the ship. On the faces of even the most experienced of the expedition staff, there was a disquieting look of disbelief. We were in the ice, in the pack, we should not have been rolling like this. The morning's motion fed upon itself. Massive swells, with ribbons of indigo leads, showed the contours of these waves of broken, old ice, that churned and spewed across the bow of our ship. Without control, blocks of ice crashed with sickening thuds from Port to Starboard. The ship tilted and pitched, confused and erratic; we tossed about like the normally stoic, trusted pack, being forced to ride a ten-metre swell, angered by a 50-knot wind.

Inside the ship, the sound of plates smashing resounded from the kitchen and at intervals we were told to stow everything, get somewhere safe and hold on. We could do nothing else but watch and wait. We had to get out of there. The Captain chose his moment and then turned the ship. We slid down the face of an enormous wave, into the depths of the ocean; its shadow and force towering above us, then brilliantly rose up the shoulder of another to end up surfing the back of the waves. We fled to a solid pack and there, in the suspended safety of a whiteout, hid from the relentless storm for the next two days.

On one side of the ship, portholes and doors could not be opened from the force of the wind, and on the other, all was surreal and calm. Many passengers felt trapped by this enforced wait in the blinding light of ice and sky, panicked by both the silence and the fury. Others felt comforted by the calm safety and honoured to be a part of history; a history that is the rite of passage to Antarctica.

We were, after all, heading to the Ross Sea and on our way to the historic sites and huts of Borchgrevink's, Shackleton and Scott. A century later and in luxury, with all our technology, satellite communications, navigation; and on an icebreaker powered by six great engines, we could not change the power of Antarctica. We were experiencing and had to pay respect to the same forces of nature as those who had gone before us. And no tourist brochure can prepare you for this, nor promise it.

During one of these nights, sheltering in the pack, the Russian Christmas was celebrated. Below the decks of sleeping passengers and over the noise of screaming CD's, two Russian Seamen sang a ballad to bring in the fine weather and to calm the seas. The next day, a hundred Antarctic Petrels flew guard with us into the Ross Sea, heralding fine weather twenty-four hours a day, until we left the continent again.

To voyage on the Southern Ocean, to cross the Polar Front and into the icy fringes of Antarctica, with all that it may bring, is a privilege. Each voyage is a new experience, shared by those aboard. Each has its own challenges and is unique.

The first time I experienced the ice, I was travelling with many other 'first timers'. Crystals of ice brushed up against the side of the ship and had calmed the rolling ocean. Inside the ship, there was silence. The faces of the crew displayed knowing smiles, but for us we were experiencing something we could not recognise, and must have looked dismayed. The landscape around us was so foreign to everything we had known in our world up until then, we could not describe what we were seeing. Comparison and analogies just did not seem to suffice, and would not be honest enough to portray our emotions. Our known perceptions, our way of viewing our world was altered and we had to learn a new way, a new language to describe what we were experiencing.

This was a re-supply voyage with the Australian Antarctic Division and I was a recipient of their Arts Fellowship. I kept journals on our voyage, and the walls of my cabin were littered with abstracts. The Southern Ocean's pounding force showed in red brush strokes and the depths of the ice reflected black and salt crusted. I was given the wet lab to paint in and it wasn't long before many came to join me. We would take sheets of paper and lay them in water baths, splashing on paint and allowing the motion of the ship to create its mark. And then there were the hours spent in quiet

AN ICE VIEWPOINT

reflection, where we would find each other out on deck, watching the ice crunch and buckle beneath us, expanding in all directions. With time, we all found ways in which to translate our new world, and to share this with each other.

My last two voyages, (as artist-in-residence on a tourist ship), have shown me that the passion to describe and share the experience of Antarctica lives in everyone who ventures south, not just those who go for work in this, the most remote region of our Earth. Any time spent together in a small group of people, creates a bond through common experience. The rarefied experience of Antarctica forms a strong bond between disparate groups and lasting, firm friendships.

I am unashamedly obsessed by the physical and emotional power of Antarctica. It is a drug for me: the only place in the world where I feel completely at peace, alive and truly humbled. And I know I'm not the only one. There is also a spiritual bond that exists between all who go south.



I don't mean to sound religious, far from it, but for those who believe in a god, there would be no better place for it to live. Where else in the world can you feel such real peace, where you can walk amongst animals that are not afraid of you, and where the very goodness and generosity of people is brought to the foreground in all things? The society that flourishes there is egalitarian and without pretence. It lingers from the heroic tales of the past and resonates into the future. With all the reality of territorial claim or sovereignty, the Antarctic Treaty still remains as the most remarkable agreement that we have been able to secure for our world. In our limited history of human visitation, we have been able to create a real utopia. Where else is war banned? Where else do all nations work in peace and co-operation? This is heaven on Earth. Heaven is not metaphysical, but real, and it survives in Antarctica.

In our everyday lives with its myriad of responsibilities, layers of contact, stimulus and interruptions, we are forced to absorb the things that are put before us, whether we want this or not. The hurried nagging of a thousand daily routines, the necessity and expectations of commitments, are a continued burden that we learn to accept and live with. In what seems like a plastic coating of duties, we are usually insulated from the basic elements of the world around us.

We normally choose a holiday to release us from these demands, and usually pick a place that is removed from our everyday lives. Many people who go to work in Antarctica, also believe that this experience will be a change, a holiday away from the everyday. But a voyage to Antarctica is no holiday, even for those on a tourist ship; it is a privileged experience that holds no comparison. What it does give you is time. And time is something we all argue about, fight for and lament, particularly time for ourselves and our own reflection on life. In Antarctica you are within a powerhouse of the Earth and are humbled by its vast power and landscape. You are not insulated from the elements, but engulfed by them. It is overwhelming for all who visit. But there is time for rejuvenation of the soul, and to best challenge our perceptions and understandings of our own place on Earth.

But how do you translate this, bring this home, describe it, and keep a memory of this, back in a world of cities and cultures? I remember an expeditioner from Davis Station once saying to me, "I just couldn't write home to anyone for

Continued>

ages. I mean, how could I explain what I was seeing, where I was, what this place was like and how it made me feel? I'm not a writer, or an artist."

Historically, the arts have always had a role in expeditions. Our Antarctic history is known to us, not just through the records of exploration and scientific discovery, but by those that captured history through imagery and words, and brought this home to us. The great journals and diaries of many of the first that voyaged south tell the tales of wonder that have sent others after them, and still inspire us today. The poetic words of some such as Frank Worsley, the romantic photographic imagery of Hurley and Ponting, and the wonderful descriptive drawings and maps of Dr. Edward Wilson are just a few. Hurley and Ponting were both professional photographers, but some of the most wonderful pieces from the Heroic Age have not been executed by professional writers, poets, or visual artists. They are simple pieces, from various members of the expeditions, that show a hunger for description, and the need to share this new world with others.

The contemporary expeditioner, whether they are there to work for one of the many Antarctic Programs, or are tourists, all carry cameras. The old adage still applies: it's hard to take a bad photograph of Antarctica. But our greatest images are those are taken by people who can see beyond the lens and technology. They use these merely as tools to capture the essence and emotive response they are feeling. In Antarctica today some of the best photographs are taken by, for example: the chefs, diesel mechanics, ship personnel and scientific field staff. The photographs of expeditions become like journal entries, some exquisite, some poignant and some pure documentation. A photograph can show a personal reflection of a moment in time, so each is valuable, but it can also be just static evidence.

Some Antarctic Programs now have an Arts Program and send down arts professionals to write, paint, compose, document and identify our contemporary understanding of the continent. For most of these people, their time in Antarctica remains a core inspiration for much of their work. It is important and necessary that we send down artists, but equally important that we start to keep real records, archives, of the everyday thoughts and descriptions of Antarctica, from the small groups of people that now visit and make up a microcosm of our societies, back in what is colloquially known in Antarctica as 'the real world'.

Probably what I treasure the most are the emails, stories and tales, true and false that have been spoken to me, written for or to me, that carve out the human character, responses and experience of this rare continent, its surrounding ocean and islands. A shy remark made by a carpenter, a joke from an ice pilot, a deeply felt poem from a ship's doctor, weekly emails from a Station Leader, a tale of exploration from a geologist, a fiction of the sea from an IR, a page from the journal of a tourist, all valuable and unique descriptions that create the living language and description of Antarctica.

And perhaps our most honest archives of the human response to the continent are shown and voiced at the dinners, meetings, conversations and gatherings held between those who meet again, to reaffirm their bonds, after their time south. I never wish to go through a storm again like that of January 6th. 2006, but my journals tell the tale and record it visually. We have the photographs too, and the video footage. But I think the best tales will arise at the many dinner parties throughout the world where this story will be told and re-told. A truly, humbling tale of Antarctic initiation.

The day after the storm, a passenger celebrated her fiftieth birthday. She had come from a vast distance to do 'a life-changing voyage to the end of the world'. After a talk with one of Antarctica's legendary figures, (a guest lecturer onboard), she wrote for the ship's log: 'Let me pass on his words of warning to you, as never a truer word has been spoken. Do not touch me, as the Antarctic is a virus and once you are infected you will never get it out of your blood'. Two weeks after this voyage, she travelled to South America and joined another ship to take her back to the ice.

As we embrace more modern, time efficient transport, (sending down staff on fast planes that can place you from a bustling city to a blue ice runway in Antarctica within three hours), we stand to forget the privilege of entrance to our destination. It seems only natural that you must spend time to travel across the ocean to this place, and to enter its water bound world. I feel that those who fly they will be cheated from having the valuable and creative time for reflection and transition. The voyage south is indeed a rite of passage. A voyage that has often followed legends and gives the right to all to create their own.

And we may also be in danger of losing some of the language that we have only just started to understand.

[Thanks to Coral Tulloch, writer and illustrator for this article and drawing of the storm from her Antarctic journal.]



BOOKS:

ANTARCTIC MEMOIRS by John Bunt. Published by Seaview Press. Price: \$32.50 + \$5.50 postage.

- An account of the author's experiences at Macquarie Island and Mawson Station in the 1950s. Available from Seaview Press, PO Box 7339, West Lakes, South Australia, 5021. Fax: 08 8242 0333. Email seaview@seaviewpress.com.au or online www.seaviewpress.com.au.

THE LOST MEN by Kelly Tyler-Lewis. Published by Allen & Unwin. Price: \$32.95.

- Concerns Shackleton's Ross Sea party, focusing on Captain Aeneas McIntosh and the problems caused by his lack of leadership experience.

HAVE SLEEPING BAG WILL TRAVEL: The Life of an Adventurer by Brian Foote and Joan Marr. Self-published. Price: \$39.95.

- Includes Brian Foote's journeys in 1957-9 to Anvers Island and Detaille Island as a surveyor during the International Polar Year.

HOOKED: A TRUE STORY OF PIRATES, POACHING AND THE PERFECT FISH by G. Bruce Knecht. Published by Allen & Unwin. Price: \$29.95.

- Describes one of the longest sea chases in history, when Australia's *Southern Supporter* tracked the *Viarsa*, suspected of illegally catching Patagonian toothfish, across the Southern Ocean until *Viarsa* was eventually escorted into Fremantle, WA.

MAGAZINE:

ISLAND 105: ISLAND MAGAZINE: WINTER 2006 edited by Gina Mercer. Price: \$11.95.

- Articles in this edition reflect the spirit of the Ice Cold Words writers' festival and include examples of Antarctic themes in non-fiction, poetry and fiction, as well as reviews of Antarctic books, plus photos sourced from TMAG's Islands to Ice exhibition.

MUSIC:

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- "A music making toolkit 'which uses real science, stunning images and extraordinary sounds from the Antarctic to stimulate musical composition.' Single copies of the CD were made available free to UK schools or colleges where GCSE or A-level music is taught, additional copies at GBP£39.20, plus postage & handling plus VAT where appropriate (cheaper rates for bulk orders). The project tied in with Sir Peter Maxwell Davies' Antarctic Symphony No 8, a new composition in the late 1990s. For more check <http://www.antarcticwaves.com/>" [Thanks to Gordon Bain for this information]



Huskies on the move at this year's Midwinter Festival at the Royal Tasmanian Botanical Gardens



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8	September	2006	TPN AGM and general meeting. 11.00am-1.00pm CSIRO. Hobart Tasmania.
15-16	September	2006	36 th Annual Northwest Glaciology Meeting. Fairbanks, Alaska. Contact: www.northwestglaciology.org .
18-22	September	2006	Workshop on the Uses of Photography to Detect Change in the Cryosphere. [As above].
17-23	September	2006	International Ice Drilling Technology Workshop. Sheperdstown, West Virginia, USA. Contact: www.idt-workshop.unh.edu .
17-23	September	2006	Joint IGAC/CACGP/WMO Symposium. Cape Town, South Africa Contact: www.atmosphericinterfaces2006.co.za .
21-23	September	2006	2 nd Workshop of SCAR Action Group on 'History of Institutionalisation of Antarctic Research within SCAR'. Santiago, Chile. Contact: C.Luedecke@lrz.uni-muenchen.de .
23	September	2006	Last day, Due South – Art from the Antarctic exhibition by John Kelly. Cambridge, UK
2-5	October	2006	Symposium on Fisheries Depredation by Killer and Sperm Whales. British Columbia, Canada. Contact www.killerwhale.org/DepredationSymposium/index.htm .
4-6	October	2006	Workshop for Polar Earth Observing Network (POLENET) for the International Polar Year. Dresden, Germany. Contact: twilson@mps.ohio-state.edu .
14-15	October	2006	Halley Bay 50 Year Observance. Northampton, UK.
23	October	2006-	CCAMLR meetings. Hobart Tasmania.
3	November	2006	
6-8	November	2006	Hydrographic Conference on Antarctica (HCA-6). Punta Arenas, Chile.
7-8	November	2006	Second International Young Scientists Global Change Conference. Beijing, China. Contact: ysc@agu.org .
25-29	June	2006	International Association of Antarctic Tour Operators (IAATO) meetings. Hobart. Tasmania.

INTERNATIONAL POLAR YEAR 2007 - 2008

For information on Australian projects, see www.aad.gov.au

L Andy Baird on top of the Igloo at TMAG [AW] R. Ice Breaker editor and Sue Halliwell inside [R. Halliwell]



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SHIPPING & AIR CALENDAR



12	October	2006	AURORA AUSTRALIS	V1.1	Departs Hobart.
15-17	October	2006	AURORA AUSTRALIS	V1.1	Macquarie Island.
24-27	October	2006	AURORA AUSTRALIS	V1.1	Casey Station.
4-9	November	2006	AURORA AUSTRALIS	V1.1	Mawson Station.
13-18	November	2006	AURORA AUSTRALIS	V1.1	Davis Station.
17	November	2006	SPIRIT OF ENDERBY	V1.2	Departs Bluff, NZ.
22-23	November	2006	SPIRIT OF ENDERBY	V1.2	Macquarie Island.
28	November	2006-	AURORA AUSTRALIS	V1.1	Arrives Hobart and departs for Casey and Davis.
1	December	2006			
4-5	December	2006	SPIRIT OF ENDERBY	V1.2	Arrives and departs Dunedin, NZ.
10-11	December	2006	SPIRIT OF ENDERBY	V1.3	Macquarie Island.
12-14	December	2006	AURORA AUSTRALIS	V2	Zhong Shan, deploy CHINARE (China).
13	December	2006	KAP. KHLEBNIKOV	V2.1	Departs Lyttleton, NZ.
14-19	December	2006	AURORA AUSTRALIS	V2	Davis Station.
20-21	December	2006	AURORA AUSTRALIS	V2	Zhong Shan.
27	December	2006-	AURORA AUSTRALIS	V2	Casey Station.
2	January	2007			
29	December	2006-	SPIRIT OF ENDERBY	V1.3	Arrives and departs Bluff, NZ.
12	January	2007			
2-3	January	2007	KAP. KHLEBNIKOV	V2.1	Macquarie Island.
6	January	2007	KAP. KHLEBNIKOV	V2.1	Arrives Hobart.
11-14	January	2007	AURORA AUSTRALIS	V2	Arrives and departs Hobart.
13	January	2007	ORION	V2.3	Departs Hobart.
16	January	2007-	AURORA AUSTRALIS	V3	Marine Science.
15	February	2007			
17-18	January	2007	SPIRIT OF ENDERBY	V2.2	Macquarie Island.
24	January	2007	ORION	V2.3	Macquarie Island.
28	January	2007	ORION	V2.3	Arrives and departs Lyttleton, NZ.
9-10	February	2007	SPIRIT OF ENDERBY	V2.2	Arrives and departs Bluff, NZ.
13	February	2007	ORION	V3.1	Macquarie Island.
15-16	February	2007	SPIRIT OF ENDERBY	V3.2	Macquarie Island.
17	February	2007	ORION	V3.1	Arrives and departs Hobart.
17-19	February	2007	AURORA AUSTRALIS	V3	Arrives and departs Hobart.
28	February	2007	ORION	V3.3	Macquarie Island.
2-4	March	2007	AURORA AUSTRALIS	V4	Davis Station.
4	March	2007	ORION	V3.3	Arrives Hobart.

FLIGHT CALENDAR FOR GINGER AND GADGET

16	October	2006	Hobart to Casey	F1,2	Proposed start of season ferry flights.
1	November	2006	Casey to Davis	F3,4	Position aircraft.
19	November	2006	Davis to Casey	F5	Possible demonstration flight to Wilkins.
24	November	2006	Casey to Davis	F6	Re-position aircraft.
14	December	2006	Mawson to Davis	F8	Transfer personnel to V2.
15	December	2006	Davis to Mawson	F7	Transfer from V2.
23	December	2006	Davis to Casey	F9	Transfer for possible V2 sea ice recce's.
5	January	2007	Casey to Davis	F10	Re-position aircraft.
9	January	2007	Davis to Mawson	F11,12	Possible flights to Syowa (Japan).
12	January	2007	Syowa to Mawson	F13	To be confirmed.
12	January	2007	Mawson to Davis	F14	To be confirmed.
1	February	2007	Davis to Mawson	F15	Retrieval of personnel for V4.
1	February	2007	Mawson to Davis	F16	Transfer personnel to V4.
9	February	2007	Davis to Casey	F17,18	Ferry flight preparations.
15	February	2007	Casey to Hobart	F19,20	End of season ferry flights.

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Almirante Oscar Viel at anchor outside
German Satellite Station O'Higgins February 2006



Above: Peter McCabe with Games Mascot "Karak"
Below: Dr Eve Merfield at Wilkes Base



Above: Marilyn Boydell - Casey Base Leader
Below: "Karak" and Garry Studd at Casey Skiway



First time. Commonwealth Games Torch Relay in Australian Antarctic Territory